invention is not limited to portable PC cameras, but may be used in any digital imaging system. Storage devices suitable for tangibly embodying program instructions include all forms of non-volatile memory including, but not limited to: semiconductor memory devices such as non-volatile RAM (e.g., memory 206), EPROM, EEPROM, and flash devices (e.g., memory 210); magnetic disks (fixed, floppy, and removable); other magnetic media such as tape; and optical media such as CD-ROM disks.

While the present invention has been described with respect to a limited number of embodiments, those skilled in the art will appreciate numerous modifications and variations therefrom. It is intended that the appended claims cover all such modifications and variations as fall within the true spirit and scope of this present invention.

What is claimed is:

sub C1

1. A method of detecting defective sensing element arrays comprising:

reading out a frame of sensing element data from an array; and

determining the number of defective elements by analyzing said data during the frame read out.

2. The method of claim 1 wherein said sensing element array is an imaging array, said method further including programmably setting high and low limits for pixel intensity values.

3. The method of claim 2 further including programmably setting said high and low limits based on illumination conditions.

4. The method of claim 2 further including comparing the pixel intensity values measured by said array to said high and low limits.

5. The method of claim 4 further including indicating a defect when a pixel's address is higher than said high limit or lower than said low limit.

6. The method of claim 1 wherein said sensing element array is an imaging array, said method further

including identifying in the focal plane of the pixel array, which pixels are defective.

7. The method of claim 1 wherein said sensing element array is an imaging array and said data is pixel data, said method further including determining the number of spatial defects by analyzing said pixel data in said imaging array.

8. The method of claim 7 including determining whether two defective pixels are closer together than a programmable offset.

9. The method of claim 8 further including adding a column or row address where a defect exists to a programmable offset and storing said address with said offset.

10. The method of claim 9 further including comparing the address of a defective pixel to said stored address plus a programmable offset.

11. The method of claim 1 further including identifying the number of spatial defects by column and row by analyzing, in said array, said data.

12. The method of claim 1 further including storing information about the location of defective elements in a memory in said array.

13. The method of claim 12 wherein each element in the array has a corresponding location in the memory and setting a defect exists bit at each memory location where a defective element has been identified.

14. The method of claim 13 including using an external tester to implement the read sequencing of the memory.

15. An article comprising a medium that stores instructions that cause a processor-based system to:

programmably set high and low limits for pixel intensity values; and

determine during the read out of pixel intensity values from the array, the number of defective pixels by analyzing pixel data from said imaging array in view of said high and low limits for pixel intensity values.

16. The article of claim 15 further storing instructions that cause a processor-based system to programmably set said high and low limits based on illumination conditions.

17. The article of claim 15 further storing instructions that cause a processor-based system to compare the pixel intensity values measured by said array to said high and low limits.

18. The article of claim 15 further storing instructions that cause a processor-based system to determine the number of spatial defects by analyzing said pixel data in said imaging array.

19. The article of claim 18 further storing instructions that cause a processor-based system to determine whether two defective pixels are closer than a programmable offset.

20. The article of claim 15 further storing instructions that cause a processor-based system to identify the number of spatial defects by column and row by analyzing said pixel data.

21. The article of claim 15 further storing instructions that cause a processor-based system to store information in a memory about the location of a defective pixel.

22. A sensing device comprising:

a plurality of sensing elements capable of indicating information to be captured; and

a circuit in said device adapted to determine the number of defective elements by analyzing the element data as it is read out from said elements.

23. The device of claim 22 wherein said device is an imaging device and said elements are pixels, said device including storage adapted to enable high and low limits for pixel intensity values to be set programmably.

24. The device of claim 22 further including a circuit adapted to determine the number of spatial defects by analyzing data as it is read out from said elements.

25. The device of claim 24 further including a window circuit that is adapted to add a column or row address where a defect exists to a programmable offset and to store said address with said offset.

26. The device of claim 25 further including a comparator adapted to compare the address of a defective element to the stored address plus the programmable offset.

27. The device of claim 22 further including a memory adapted to store information about the location of defective elements.

28. The device of claim 27 wherein said memory includes a location corresponding to each of a plurality of elements.

29. The device of claim 22 wherein said circuit and said elements are formed on the same die.

30. The device of claim 22 wherein said device is an imaging device and said elements are pixels, said circuit being formed on the imaging device's focal plane that includes said pixels.